Educational Publications
Bureau of Research and Education
American Foundation for the Blind, Inc.

SERIES II. CURRICULUM AND INSTRUCTION

No. 1

Present Status of Instruction In Primary Reading In Residential and Day School Classes for the Blind

By
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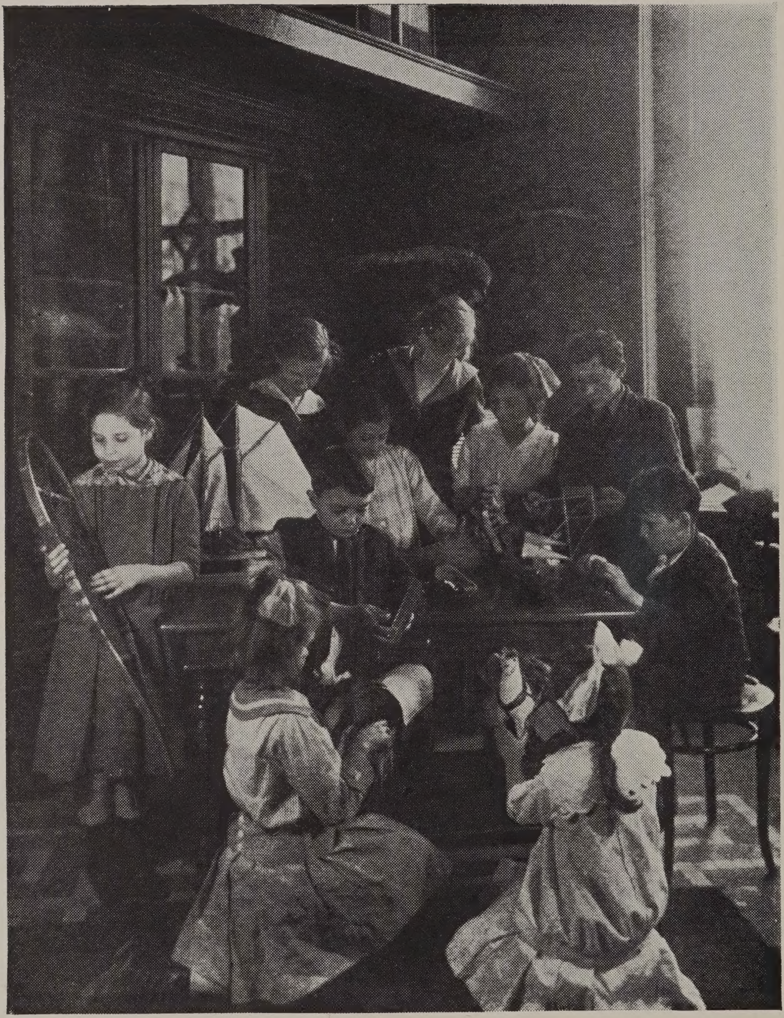

Courtesy of American Museum of Natural History.

**Class of Blind Children at the Museum Talk.—
"How Men Travel"**

Present Status of Instruction In Primary Reading In Residential and Day School Classes for the Blind

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125 East 46th Street,
New York, New York
May, 1926

FOREWORD

This monograph is designed to fulfill three purposes:

1. To serve as a reference book for teachers just entering the work for the blind who feel the need of information concerning methods which have been found to be most practical by other instructors who have had more experience in this field.

2. To make it possible for the individual to compare his practice in the teaching of reading with that of others throughout the country. No matter how experienced he is, almost every educator suffers occasional moments of dissatisfaction with his own methods. At such moments he may wish to know what other people have done in similar situations.

3. To provide a background for a further study of the problem of teaching primary reading in schools for the blind. Before it is safe to inaugurate experiments for discovering more efficient ways of teaching it is necessary to know that the experiments are not duplicating what has already been done. It is also advisable to know of the help which may lie in related fields of work.

It is assumed that all children in schools and classes for the blind are really blind. At some later date it is hoped that a study can be made of the problem resulting from the presence of children with partial vision in schools for the blind, for whose education the schools are responsible.

Appreciation is expressed for the courteous and detailed assistance given the writer by the following residential and day school classes for the blind:

California School for the Blind.
Chicago Public School Classes for the Blind.
Cleveland Public School Classes for the Blind.
Colorado School for the Deaf and the Blind.
Connecticut School for the Blind.
Detroit Public School Classes for the Blind.
Iowa College for the Blind.
Jersey City Public School Class for the Blind.
Kansas School for the Blind.
Louisiana State School for the Blind.
Maryland School for the Blind.
Minneapolis Public School Classes for the Blind.
Missouri School for the Blind.
Nebraska School for the Blind.
Newark Public School Classes for the Blind.
New Mexico School for the Blind.
New York Institution for the Education of the Blind.
New York State School for the Blind.

Ohio State School for the Blind.
Oklahoma School for the Blind.
Oregon State School for the Blind.
Pennsylvania Institution for the Instruction of the Blind.
Perkins Institution and Massachusetts School for the Blind.
Tennessee School for the Blind.
Texas School for the Blind.
Western Pennsylvania School for the Blind.
Wisconsin School for the Blind.

Many of these schools have sent interesting and helpful reports from teachers of beginning reading in addition to the information received from the superintendents. The writer has also had an opportunity to visit several of these schools to study at first hand the methods which they employed. The generous co-operation which has been given by everyone has gone far toward making enjoyable a rather strenuous task. Thanks are due to the following for the critical attention which they have given to this monograph: Mr. O. H. Burritt, Mr. B. S. Joice, Mr. Edward M. Van Cleve, Mr. Edward E. Allen, Dr. Samuel P. Hayes, Miss Alice Lane, Miss Bertha Buck, and Miss Ethel Evans.

May, 1926. K. E. M.

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PRESENT STATUS OF INSTRUCTION IN PRIMARY READING IN RESIDENTIAL AND DAY SCHOOL CLASSES FOR THE BLIND

What greater boon can be granted to the child just entering school than the revealing to him of the mysteries contained in books? Books carry him to lands where animals can talk and fairies make wishes come true. Books tell him delightful games to play and show him toys to make. The child who has learned the secret of the friendship of books is most likely to become the man of broad interests who is a valued asset to his community. A properly controlled love for reading is especially beneficial to the blind child. Through much reading he can go far toward making up for the lack of that incidental education which his sighted brother receives all unconsciously as he runs down the street or looks about his schoolroom.

More than twenty per cent of the blind people in the United States are without sight before the age of five. Another eighteen per cent are blind before the age of twenty-one. Out of this number those whose appetite for reading is well developed have an advantage over their mates by virtue of the fact that their larger stock of ideas, their richer and freer associations make them think in terms better understood by their seeing playmates. Those blind children who never learn to appreciate the value of reading are hampered through life by the resulting paucity of their ideas, although sometimes this very mental poverty prevents their recognizing the lack as clearly as do their neighbors. For such children, progress through school becomes a struggle because of their resistance to the acquisition of knowledge through the printed page. No matter how clever the teacher, nor how conscientious, he can hardly supply by word of mouth all the information which all the pupils should have.

Thanks to the genius of Braille and to that of his resourceful successors, there exists for the blind today not only an adequate type for reading, but also the practical machinery for printing this type in large quantities. Every blind person who has average ability and normally sensitive fingers can learn to read braille.

Institutions and public school classes teach the young blind. Public and private organizations arrange for the instruction of those losing their sight after school age. In the United States and Canada, large circulating libraries supply braille books and magazines to all who care for them.

The supply of material in braille is becoming more abundant, more diversified. Periodical literature keeps the blind man informed on present-day affairs. In Germany there are more than twenty braille periodicals covering such different subjects as religion, politics, housekeeping, piano-tuning. France has at least six publications in braille covering many subjects. Great Britain has more than twenty dealing with cultural or occupational interests. The United States, with probably twice the blind population of Great Britain, has less than one third the number of braille periodicals.

No one knows just how many seeing adults can truthfully be called readers, nor do workers among the blind have any idea as to the actual proportion of blind adults that enjoy reading. However, educators of the blind share with those of the seeing the definite impression that improved methods of instruction would increase the number of readers many-fold. Curricula in schools for the seeing are being reorganized so as to require a great deal of constructive reading by the pupils in all their subjects. Fewer textbooks are used, but more reference books. Each year books used in schools for the seeing are becoming more vital in content and more attractive in appearance. The elementary school child with vision who can withstand the lure of the books he meets in school today is indeed to be pitied.

Two of the chief incentives to a fondness for reading are well chosen pictures and an abundance of reading material which appeals to the interest of the children. At present, neither of these is effective with blind children. The second will be supplied in time. A partial substitute for the first can be provided, as museums of familiar objects accumulate, and as projects furnishing meaningful situations are developed by individual teachers.

The teaching of reading in residential and day school classes for the blind is in a state of evolution. Teachers who are already fully occupied with their day's work are spending their free time studying this problem of reading, trying to find an answer to the question, "How can blind children be taught to love constructive reading?"

II.

Many factors combine to determine the degree and the trend of a child's interest in reading. Those that have the widest application among blind children may be of minor importance or even non-existent for seeing pupils. Among blind children, the two most deeply rooted causes for lack of interest in reading are inertia, both mental and physical, and lack of intelligence. Extreme inertia, often mistaken for laziness, is very common among the feeble-minded and is found occasionally among children of normal mentality in the public schools. General observation would seem to indicate that few blind children of truly superior intelligence entirely succumb to this passivity. The driving force within them apparently compels them to explore their surroundings and to attend with interest to the life about them. The blind child of average gifts, however, seems to fall more easily under the temptation merely to vegetate. This unnatural ennui may be due to lack of proper attention at home. It may be the result of an inherited lack of vitality, or it may be the outward manifestation of day-dreaming. If it is caused by constitutional inferiority, then the child who suffers from it must wait for a cure until science has found a remedy for unfortunate inheritance. But what teacher feels qualified to say whether or not a child is hopelessly incapable of "waking up", if he is known to have fair intelligence? Possibly day-dreaming accounts for Johnnie's willingness to sit smiling vacantly, his fingers wandering aimlessly over page three of his primer, when his classmates have reached the end of page five. Maybe malnutrition or general debility has made the strain of reading too much for his limited powers of attention, so that he has turned to the less irksome task of allowing his mind to wander at will.

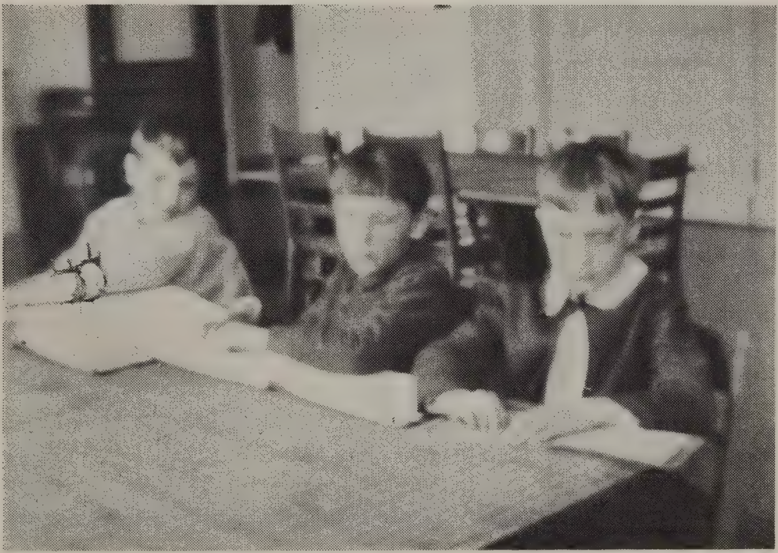
Lack of intelligence is the second fundamental deterrent from an interest in reading. Every schoolman in the work for the blind has met at least one feeble-minded child, possessed of a special ability, who loves to read long hard selections, yet who understands not one word that he reads. With this exception, however, low-grade boys and girls take slight interest in reading because printed symbols convey few thoughts to their sluggish minds. Persistence on the part of both teacher and pupil may bring such a child through the reading class of the fourth or fifth grade. Beyond this point, however, reading will seem a duty to be shirked instead of a joy to be sought.

From the point of view of the blind first grade pupil, the difficulty of learning to read is likely to be very great because he does not know what the book or the teacher is talking about. The majority of blind children have not had the experience which would make them familiar with the vocabulary of the primer and first reader. Yet it is these first books that exert the strongest influence upon the formation of the reading habit. If the words on the printed page mean nothing to the child, he can hardly be expected to consider reading a desirable occupation. Of what interest is the story of The Little Red Hen if one cannot imagine a hen? What fun is there in following Dicky Dare to school if one does not recognize the animals he meets?

A short time ago Dr. S. P. Hayes in his "Self-Surveys in Schools for the Blind" found that in a number of our best residential schools for the blind, the children were from one to three years behind seeing children in their ability to define the words in the Terman Vocabulary test. This test gives a fair indication of the number and variety of ideas with which a child is on familiar terms. He probably has a speaking acquaintance with many others, but it is the words which the pupil can use freely that furnish him the foundation on which he can build future knowledge. The "limitation of life experience due to blindness" forms a check to the acquisition of more experience—a fact which demands our serious attention. It has not been generally recognized that the size and the character of the blind child's stock of ideas, at the time he enters school, bear a close relationship to the degree of progress he makes in learning to read. Nevertheless, educators of the blind have long been conscious of the handicap which blind pupils suffer through their lack of that incidental education which the seeing child is constantly receiving. They have done much in the way of bringing their students into contact with different sorts of associations and ideas. Museums of familiar objects, gardening, building, caring for carefully chosen pets all go far toward giving the blind child the same attitude toward life that the seeing child has. At the same time, this variety of experience adds greatly to the attractiveness of books, if the experience has been deliberately correlated with the contents of these books.

The pleasantness and the adequacy of the reading media exert a deep, if unconsciously felt influence on interest in reading. Such apparently trivial matters as the height and shape of dots, the spacing between lines, the size of the page may determine the popularity of a book, even among adults. These are by no means trivial matters in determining the popularity of a book among children. For instance, though pleasanter to the eye, large dots with little space between them seem to confuse the touch, thus decreasing both speed and comprehension in reading.

The best size of braille book for beginners has not been determined. Probably first grade books should be wide enough so that the child's attention will not suffer through his too frequently hunting for the beginning of the next line, but it should certainly be narrow enough so that his arm is not twisted at an awkward, inefficient angle as his finger approaches the end of each line. There is general agreement that books for primary children should be smaller than those for adults, but how much smaller? Many teachers have indicated their satisfaction with books the size of the Beacon Primer. In England, small "pocket editions" containing one or two short stories are published for children. These have a special appeal to children in that they can be read in a short time and can easily be carried around. Since books in Grade One and a Half, similar to these, are being experimented with at the Library for the Blind, New York Public Library, we shall soon be able to judge for ourselves of the value of these little volumes. Even now the schools are welcoming for use with older blind pupils



Reading Postures Assumed by Pupils When Reading Books of Different Sizes

the new standard size of braille book put out by the American Printing House. These smaller volumes appear to be more satisfactory than the bulky ones previously used.

Many teachers feel that because of the considerable part which muscular dexterity plays in the reading of blind people, it is important that clumsy children should have special pre-reading experience. Unless they can handle a book with some degree of skill, or follow the braille without too many slips, they are at a disadvantage in learning to read. They reason that although some children may profitably begin braille within a few days after their entrance into a school, those beginners who are particularly awkward in the use of their hands, should receive more training preliminary to reading, through motor experience obtained in playing with Montessori material, or through learning to lace shoes. knit bags, or weave mats. Otherwise they may acquire a dislike for the elusive braille dot.

Another most important factor in developing in blind beginners a love for reading is the degree of the teacher's own love for books. If the teacher is a frequent visitor to the world of books, she is bound to feel a greater enthusiasm for her work of teaching children to appreciate that world. The teacher's method is important, but the influence of her own devotion to books is her most essential contribution to her pupils.

III.

The last quarter century has witnessed a remarkable change in the profession of teaching. Schoolmen have been won over to the need for experimentation in the development of pedagogical methods. In no subject has this changed attitude been more apparent than in reading. Many leading educators and psychologists have devoted years to the various phases of the reading problem. Their researches have tested the soundness of more than one questioned educational theory, and have shown the impracticability of other doctrines which until recently have been in high favor. The last word on the subject of reading has not been said, and probably never can be said. However, much has already been accomplished to place the teaching of reading on a sounder psychological and pedagogical basis.

There has been very little experimental work on the teaching of reading to the blind. Because of the limited number of children in any one school for the blind, instructors have not felt qualified to draw general conclusions from their own experience. Until recently no student has attempted to collect data on this subject by gathering material from a number of schools and classes. The Uniform Type Committee had made an intensive study of the reading of adults. But until the American Foundation for the Blind began its study of reading methods, the only research which had been carried on with a large number of children was that done by Dr. S. P. Hayes and his assistants, when they made a survey of a number of the leading residential schools for the blind in America in 1919-20. The reading tests which were given in that survey showed quite clearly that a much better rate of reading is possible than is actually achieved by the majority of blind children.

In a summary made last year of supplementary data collected by the Uniform Type Committee, a number of points as to the mechanics of braille reading were made more definite. Experiments which are now in the process of tabulation at the Foundation will shed still more light upon this complicated problem of teaching reading to blind children.

In preparation for the further study of this subject, it was necessary to become familiar with the way in which reading is actually taught to blind children today. For this reason, superintendents of schools and classes for the blind in the United States were asked to co-operate in the collection of information. The response was unexpectedly generous. Twenty-seven school superintendents and supervisors from all sections of the country have contributed valuable data on the methods now employed and the reasons for their use. The Proceedings of the American Association of Instructors of the Blind show that, as far back as 1886, there were heated discussions among educators of the blind regarding the relative merits of different reading methods. So far as is known, however, the data now on file at the Foundation represents the first widespread effort toward clarifying the subject. A number of schools sent reports from one or two teachers, in addition to those of the superintendents. The writer has had the opportunity of visiting nine of these twenty-seven schools and classes. Thanks to the courtesy and co-operation shown by the teachers and superintendents, she has been able to gain a considerable degree of familiarity with the work in reading in those schools.

Forty years ago there seems to have been much disagreement over the relative merits of the letter method and the word method of teaching reading to braille beginners. Today there appears to be a tendency to combine these two methods. Out of thirty-five statements recently received, sixteen advocate this combination of methods, which may be called the letter-word method, for the sake of convenience. Twelve teachers teach strictly by the letter method. Five teach the word method, and two teach whichever method they think will best suit the individual child. Of those teaching by the letter-word method, six place the emphasis on the letter, eight place it on the word, and two give equal emphasis to both letter and word.

Of those instructors who teach reading by the letter method, the majority have grouped the letters in one way or another so as to show some reason for the order in which the pupil learns them. Similarity of sound or of structure account for most of the groupings. Other groupings have been made on the basis of the mechanical arrangement of the dots. In Grade One and a Half this is practically the alphabetical order. Almost everyone who teaches by the letter method has the children make words out of the letters as they learn them, in order that the letters may be fixed in the child's mind, through use.

Teachers using the word method give the letters incidentally or through the medium of the writing class. In one school system the teacher of the class for the blind feels assured that her pupils know all their letters and know how to spell all the words they have had, as a result of following the city requirement that children correlate writing and spelling in drill on writing spelling rhymes. All of the exponents of the word method introduce sentences almost from the first. They train the children to look for complete thoughts by starting them with action words which are one-word sentences, such as "hop", "jump", "cry".

Nineteen out of thirty-five instructors, or slightly more than half, begin the children on a study of the dots before introducing them to the letters. Ten of these are followers of the letter method, nine are followers of the letter-word method. A large majority of those beginning with the dots make use of peg-boards, tack-boards, or marble boards, containing one to six braille cells. In a few schools the study of the dots is preceded by drill in recognizing directions, since this makes the cell more meaningful to the pupil. A pile of blocks may be used to represent the six braille dots. With these the pupil learns the meaning of the terms "right", "left", "middle", "top" and "bottom". Then he learns the numbers of the dots before passing on to the peg-board. The recognition of terms of directions is also taught after the same manner on the peg-board. One teacher has the children imagine that the braille cell is a braille street with houses numbered 1, 3 and 5 on one side of it, and houses numbered 2, 4 and 6 on the other side. Other instructors teach the location and numbers of the dots by having the pupil make them himself, either by writing them on a braille slate or by punching them through on a reversible peg-board. Usually the pupil next reads and makes letters and words on the six-celled peg-boards. A few of those who start the pupil on the dot go from a study of the dot directly to reading and writing letters on braille paper. In two schools metal sheets embossed in braille are given the pupils, before making the transition to paper. This is thought to "develop the sense of touch."

Among those employing the letter-word method the sentiment is almost equally divided as to the practicability of giving drill on the dots before starting with the letters. There are nine who emphasize the dot in some way or other before teaching the letters, and seven who begin immediately with the letters. Judging from the data available, all of the teachers who begin with the letters make use of slips of paper each of which contains one braille letter. One teacher also has worked out a graded series of slips, each of which contains one, two, or three familiar letters mixed in with

Doing His Own Thinking While Learning to Read. Building Answers to Questions from Word-slips Which Have Been Given Him

one or more unfamiliar ones. Another uses small blocks having on them braille letters. As the pupil learns new letters, these blocks are combined to make words. A number of teachers have word slips which are given to the pupil after he has learned the letters composing the word. The instructors who emphasize the word rather than the letter naturally resort to word-slips sooner and more frequently than do the others. After the first four to ten letters are learned, they even present phrase and sentence slips which involve few words or letters but which present complete thoughts. In a few schools where the dots receive slight attention in the reading class, writing is begun simultaneously with reading or prior to reading. In one school system, the children are taught to use the braille writer before they are given the slates, because the slate calls for such minute movements as to tire the child unnecessarily. It was pointed out that this is in accord with the tenets of child psychology, as practiced in kindergartens and first grades throughout the world, namely that the child should learn the gross motor co-ordinations first, acquiring skill in finer and finer ones as he progresses through the primary grades. The braille writer has another advantage over the slate, from the point of view of reading, in that it does not confuse the child by requiring him to write one way and read another.

The co-ordination of reading with other subjects has been widely discussed for years. In many primary schools for the seeing which are attached to university or normal training schools, writing is postponed until the children have read two or three books. The second semester of the first school year is frequently the time chosen for starting the class on writing. After writing has once been introduced, however, it is closely correlated with reading. The children write only to give information to someone else, or to give expression to their thoughts. What the children write at once becomes an integral part of the reading lesson. Reading as a separate subject in the primary grades receives more attention today than ever before. In the grammar grades, it is so completely correlated with the other subjects that it is almost lost sight of as an independent item requiring consideration from the maker of schedules. Reading ability is judged by the accuracy with which the pupil has gleaned the thought from an article on nature study, or the excellence with which he gives a reading before the English class.

There has been a widespread feeling among educators of the blind that, because of the difficulties of reading for blind children, reading should receive considerable emphasis as a separate subject even into high school. They have not thought it safe to trust the improvement of the pupils' reading ability to practice received in connection with other subjects. One valid reason for this belief has been the unavoidable scarcity of informational books covering other school subjects. Although good textbooks are available, very little supplementary reading is possible even now, in history, physiology, arithmetic, or anything else than literature. Two subjects with which reading is closely correlated, in schools for the blind, are writing and spelling. The correlation with spelling from the time of the first reading lessons is known to exist in at least ten of the schools from which we have records. Writing and reading are correlated before the end of the second grade by twenty-eight of the thirty-five educators. Twelve of these teach the two subjects together from the first, eleven more begin correlating them after the children have learned to read a few letters. Five others wait before introducing writing until the pupils are fairly familiar with the reading process. Eight teachers would like to correlate reading with other school subjects from almost the first of the child's school career, but find such correlation exceedingly difficult because of the scarcity of suitable material in braille.

Before any other phase of the problem of primary reading is discussed, mention should be made of the important part which phonetics play in teaching blind children to read. Twenty-two instructors use phonetic training with beginners. Three of these lay very little emphasis on phonetic work. Eight more use letter-phonics only, considering the sounding of the letters an important element in teaching children to read. Eleven teachers follow some complete phonetic system. One of these eleven separates the work on phonetics from the reading period, but uses the words which appear in the reading lessons. Fifteen teachers precede the first reading practice by a few lessons on letters and syllables pronounced phonetically. A few others introduce reading and phonetics simultaneously. Those teachers who use the letter-word method are the most thorough-going believers in the value of phonetics for blind children. Fourteen of the sixteen who use this method also use phonetics; ten of them lay much stress on it. Later an illustration will be given of the use of phonetics in connection with the letter-word method.

We are surprised to find that wide disagreement exists as to when contractions should be taught to primary children, some teachers recommending their introduction the latter part of the first year, while others would delay contractions until the first part of the fourth. One would hardly ask for greater diversity of opinion than this. Summarizing, we may say that while eight people would have contractions taught toward the end of the third grade or later, thirteen think that they should be introduced to the child before that time. Some of those who would have contractions presented in the second grade or earlier would like to have them presented gradually. This would mean that the child would probably be in the latter half of the second grade or the first half of the third grade before he had learned all the forty-four contractions in Grade One and a Half. Thirteen teachers think that the first half of the third grade is the proper time to present contractions to the children. By this time they will have established a sufficiently deep habit of correct spelling so that the short-cuts offered by contractions are not so likely to result in slipshod work. Those who would postpone contractions until later are convinced that the majority of blind pupils do not have a thorough grasp of the make-up of words, and are not well enough grounded in spelling by the first semester of the third grade. Among those who would teach contractions before the third grade, there seems to be a general agreement that the right use of contractions should be incorporated at the earliest possible date in the child's idea of spelling. It is claimed that this tends to produce more accurate spelling later, since eventually words are always written with contractions.

Although no effort was made to collect definite information on the use of books for the teaching of contractions, it has been found that at least eleven educators of the blind feel a need for books which introduce contractions to their pupils gradually. Two school systems have had such books embossed for them. These books are to be found in the book list given on page 32.

When the Uniform Type Committee collected its data on the mechanics of braille reading, it was found that approximately forty-eight per cent of the twelve hundred readers tested used both hands for reading. Only a little over one-third of the total number of readers used the right hand only. Forty-three per cent of the 579 using both hands are in the fastest third of all readers, as against the thirty-two per cent of the right-handed readers who can be so classed. Those who read with the left finger are probably even more scarce today than they were fifteen years ago. Only a small handful are to be found among the rapid readers. Today there is hardly a teacher who would advocate the use of the left hand only for reading, except in the case of some child whose right hand is insensitive or missing, or who is congenitally left-handed. Twelve teachers report that they start the children reading with both hands from the first, although two of these give them permission to change to the right hand later if they wish. Four teachers have their pupils start with the right hand only, but one encourages them to change to both hands later. Whichever way the children are taught at the first, whether with the right hand or with both, the reason given by the teacher for her method is usually that it is the natural way for a child to read. The advocates of one-handed reading feel that the child is less likely to lose his place if he keeps the beginning of the line with the left hand, and is therefore less likely to lose his interest. Those who have the children start with both hands argue that there is very little trouble over losing the line, and that greater speed and accuracy are assured by the use of both hands.

The Uniform Type Committee found only fifteen people out of 1200 who read ahead on the next line with the left hand before finishing the preceding line with the right hand. Most of these were among the very fastest of all the readers. Apparently this method of reading has grown in popularity since 1912, because now many more than fifteen such readers are to be found in New York City alone. At least four different schools and six different instructors train those pupils who are capable of it to read in this way.

In one school two of the primary teachers have tried the experiment of training all but the obviously handicapped among their pupils to read ahead on the next line. The pupils could choose one of two methods. They could keep the place with the left hand until the right hand had traveled some distance along the line, and then read in on the next line with the left hand until the right hand came down to meet it. Or they could follow the line with both hands most of the distance across, and could then bring the left hand back to begin the next line while the right hand was finishing the preceding line. In either case, the two hands would meet somewhere within the line instead of at the beginning. Because of many unforeseen but unavoidable interruptions, the teachers have not yet been able to gather scientifically exact figures which would tell definitely what should be the policy with regard to training pupils to read in this way. Everyone who has followed this experiment, however, has received some very definite impressions which are worth stating. Ability to read ahead on the next line with the left hand before the right hand has finished the preceding line appears to be dependent primarily on the degree of intelligence, the tactile acuity and the motor ability possessed by the reader. If he is not of average intelligence, yet can read in this manner, then he is one of those rare subnormals who has a special motor ability combined with a special reading ability. Reading ahead in this fashion requires the learning of a complexity of motor and mental habits which is beyond the ability of children with less than average intelligence. Not only must a child have average motor and mental ability to read in this most efficient manner, but he must have learned to attend well to his tactile perceptions. He must also have a fondness for reading and a mental alertness which stimulates him to greater speed for the sake of quicker enlightenment. It seems, then, that good readers can be made better readers by learning to read ahead on the next line, but that poor readers cannot be made better readers by the same means.

In at least ten residential schools and day school classes, some provision is made for giving special attention to dull or backward children. This question of educating properly the subnormal children who come under the jurisdiction of educators of the blind presents a serious curricular problem, as well as a teaching problem, and as yet no solution has been found.

The teaching of line type has practically disappeared from the schools, but because of its social and cultural value it is taught by some schools before the completion of the primary grades. One teacher gives the pupils line type and square hand writing during the first two years, postponing the braille until the third grade. Her children read the line type with remarkable fluency. The writer has personally observed them carefully. They are unquestionably the gainers for the experience they derive from being able to read for themselves inscriptions on statues, under pictures, and so forth. The superintendents and instructors who have abandoned the use of line type argue that the learning of another system of reading carries disadvantages which outweigh its possible advantages.

Another problem for which no solution has yet been found is that of knowing how to make good braille readers out of partially-seeing children who must conserve their vision. Only a few of the thirty-five educators, who have contributed information on other phases of the reading problem, have mentioned this point. Two teachers use aprons over the books with fairly good success, although they are not satisfied with the results. One superintendent has met the difficulty by having the pupils do all their reading under supervision until their reading habits are well and permanently formed. How to educate the partially-sighted who are not eligible to sight-saving classes is a question that should be subjected to thorough study in the near future.

It has been quite generally assumed that there was comparative agreement concerning the time which should be devoted to reading in the lower grades, and concerning the number of children who could be successfully taught in one group. However, information which has been incidentally received shows that there is the widest difference in both opinion and practice. The time allowed to reading each week varies from 180 minutes to 500 minutes. Part of this variation may be due to the fact that some schools rely on work in correlated subjects for drill on reading. There is, however, enormous variation in the length of time devoted to formal reading practice, which cannot be accounted for in any other way than actual difference in number of periods allowed for this subject. It has not been determined whether or not the children who spend more minutes a day on reading are the more efficient and intelligent readers. So many factors enter into the development of good readers that it is not safe to judge the efficiency with which a school handles this subject by the amount of time it gives to it.

The number of children who are taught reading at the same time seems to vary according to the exigencies of the moment. If a teacher has ten small pupils no one of whom has seen braille before, and if she has only thirty minutes a day in which to teach them all, she is likely to feel that she must do the best she can by grouping them together in one or two classes. Yet she may be a firm believer in individual instruction. The number of children who are taught beginning reading at the same time varies from one to fifteen. Those teachers who have made a special study of the subject of reading are unanimous in the belief that a class in beginning reading should have not more than three pupils. They consider individual instruction the best plan for the first few lessons. Such ideal conditions, however, are not always possible.

The relative merits of oral and silent reading and the part that each should play in the child's school experience have been discussed, pro and con, for years among educators of the seeing. At last, a multiplicity of experiments has proved the value of silent reading, and has established the approximate relation which silent reading should bear to oral reading. Not many years ago some educators went so far as to advocate doing away with oral reading entirely. Today the value of oral reading is no longer disputed, but it by no means dominates even the first grade reading class.

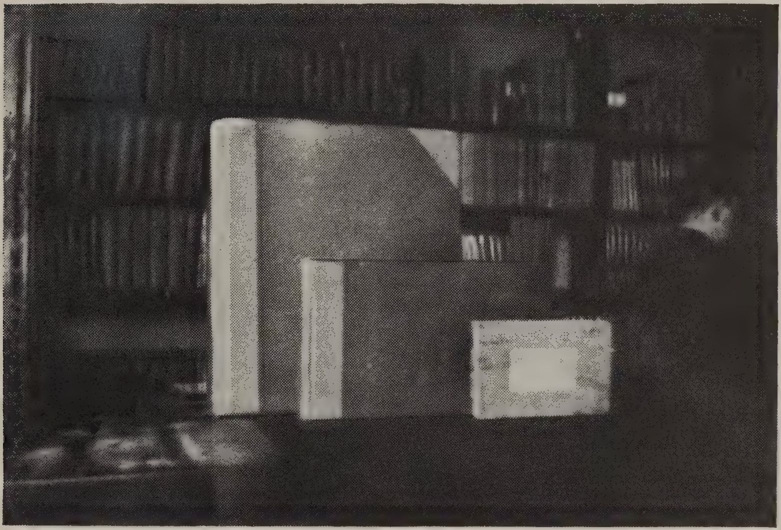
Many educators of the blind, who would agree to the greater importance of silent reading for children with sight, are of the opinion that blind children need much more oral reading than do seeing children. No blind child below the fourth or fifth grade is likely to read silently more rapidly than he can read aloud. There is, therefore, no reason for giving up any possible advantage which oral reading may hold over silent reading for noting comprehension, expression, pronunciation of words, and phrasing. Those teachers who are making some provision for silent reading from the first grade contend that comprehension can be checked just as carefully in silent reading as in oral reading. Speed and comprehension tests can be adapted from those used by the seeing, and material can be copied from silent reading books. Expression, pronunciation, and phrasing can be tested in dramatic oral reading, recitations, or audience reading. The writer has a record of eighteen educators, some of them superintendents and supervisors, who expect some degree of silent reading even in the first grade. The actual time allowed varies widely. Many have the pupils read silently under supervision for one period a week. Others give a short time each day to silent reading. One or two gradually increase the amount of silent reading in the first grade until it approximates eighty-five per cent of the total reading time.

Probably the chief deterrent to a wider use of silent reading in schools for the blind has been the lack of appropriate material which could be obtained in braille. Any teacher who would adequately test the efficiency of her pupils' silent reading has had to spend much time transcribing by hand some of the material from silent reading books for the seeing. Within a short time silent reading books of a high degree of excellence will be in braille, and may be used by those educators who place special emphasis on this type of reading.

The difficulties which confront the teacher of blind children are bound to vary somewhat according to the teacher, the class, and the available material. However, in all correspondence or conversations with superintendents and teachers, certain difficulties have stood out as common to most situations. The one most frequently mentioned is the inferiority of touch to sight as a reading tool. One person after another comments on the fact that teaching blind beginners to read must of necessity take much time and patience, because of the fact that the blind child's finger can discern only one letter at a time. This statement raises the interesting psychological question as to when the finger really perceives the dots in their relation to other dots. Later reference will be made to this point.

Several of our correspondents remark that it is very hard for their pupils to "visualize" what they read by touch. Such words as "cow", "lost", or "wink" may be explained by other means than visual imagery. Explaining words like "sky", "red", or "light" in any other than visual terms taxes the ingenuity of the most original teacher.

Another difficulty is inherent in the construction of the braille alphabet itself. This is the fact that letters like "i" and "e", and "h" and "j" are confused by the children. A similar confusion is experienced by seeing children in writing and reading "b" and "d", or "q" and "p".



BOOKS FOR BLIND CHILDREN

Fifty Famous Stories, 12½ in. long, 14 in. wide. Stories of the Red Children, 7 in. long, 12½ in. wide. Tom and Ellie (Grade I), 4½ in. long, 7 in. wide.

The position of the pupils' hands causes more than one teacher to worry. Some find that it is hard to get the children to read with both hands at once, while others find that children insist on reading with both hands when they are instructed to use only the right. Apparently children prefer their own methods to those of the teacher in spite of any inducements she may have to offer as to speed, gracefulness, or ease of reading.

The fatigue on the part of the pupil due to such mechanical obstructions as the irritating character of the dots, improper line and word spacing, and excessive bulkiness of books has also received some comment from instructors. It is felt that the difficulty in keeping beginners from pressing down on the dots too firmly is a genuine one, because such unnecessary pressure not only makes interpretation less easy for the finger, but makes the hand and arm so tense that the child is quickly exhausted. The tendency to reread a word or a phrase and the resulting jerkiness of expression are faults that characterize seeing children as well as blind ones, but because of the greater slowness with which braille is read, both tendency and result are accentuated in the reading of blind children.

Many teachers find it a laborious task to furnish the pupils with all the constructive reading material they should have for seat work. Their great need is for a supply of incidental material with which they can keep part of the class profitably occupied while they give closer attention to the other part. This lack stands a fair chance of being remedied in time.

The one difficulty, greater than all others, for teachers of blind beginners is knowing how to care adequately for children of half-a-dozen mental ages in one class group. Few educators have mentioned this in their correspondence, yet in conversation it is one of the first points they bring up. Since there is no immediate prospect of a transfer of all subnormal children from schools for the blind to special institutions, their presence is a problem which teachers of primary classes for blind children must continue to face. Fortunately, as a greater variety of reading matter for children is made available, pupils of different mental calibre can be provided for more easily than at present.

In the foregoing pages certain policies and general tendencies are noted which it may be well to summarize for the benefit of teachers who are new in the work for the blind, and who feel the need for some criterion by which to guide themselves. The future may witness a lessened or a changed emphasis on some points, but in the absence of experimental evidence as to the value of different methods, it may be a "very present help in time of trouble" to know what procedures are looked upon with most favor by a large number of other teachers in this rather limited field.

The letter-word method of teaching first grade pupils combined with a liberal use of phonics is approved by more instructors than is any other method. Contractions are introduced sometime during the latter part of the second grade or the first part of the third grade by the majority of teachers. Writing is correlated with reading from the first part of the first year, many excellent teachers introducing the two subjects simultaneously. Many believe in correlation of reading with other subjects, but are hampered by lack of suitable material in braille. It is thought that some silent reading should be required of the pupils even in the first grade, the amount increasing each year. There is no consensus of opinion as to the amount of time which should be allowed for reading. Until more is known on this point, probably the wisest course for the new teacher to follow is to accept the time allotment which had been given by her predecessor. Judging by the opinions of the teachers who have given most thought to the subject of reading, children should be introduced to the intricacies of braille in groups of not more than three pupils at a time. According to our data, children are allowed to read with either the right hand or with both, although it is thought preferable to start them using both hands. When pupils have once gained considerable facility in reading, any natural inclination on the part of the pupil to read ahead on the next line with the left hand before finishing the preceding line with the right is not discouraged.

IV.

The teacher who is inexperienced in instructing blind children may find some assistance in the following sample lessons, illustrating the presentation of material by the three methods, which are designated as the "letter method", the "word method", and the "letter-word method." Each lesson given here is a composite of a number which teachers have very kindly sent to the writer, or which she has herself observed. Section V offers a descriptive list of auxiliary devices and materials which have been found serviceable by many teachers.

A Lesson by the Letter Method

(This lesson, or unit of work, may represent from three to ten weeks of instruction, according to the ability of the children.)

The children are given six blocks, representing the six dots of the braille cell. Each block is given a street number,—one, three, or five on one side of the street; and two, four, or six on the other side. Then the family in each block-house is given a name. The one in the upper left hand corner is called Upper Left. The family that lives at No. 3 is called Middle Left, and the one at No. 5 is called Lower Left. The same arrangement holds for the families on the other side of the street, since in this small town the families that are related like to live near each other.

When the children all know their locations well enough so that they will not be confused later in building letters, they are promoted to the peg-board. On his peg-board each child builds a town resembling the one he has known with the blocks. Then he makes other towns having different numbers of families in them. First, he starts with a deserted town that has just one old resident. That resident lives in the same location on the street as did Upper Left in the block town. After the pupil can always see that Upper Left gets into his right house, then another wanderer, maybe a prospector, comes to live across from him where Upper Right once lived. Then another man comes to town and moves into the house owned by Middle Right. In this way the child learns the letters "a", "c", and "d." Then he builds another town, which has two families at first, living at Nos. 1 and 3. When he has learned the alphabet in this manner, he is given the letters on slips of paper.

Since most pupils are eager to begin writing, the class is told that as soon as each child can recognize three letters on the letter-slips he may learn how to make them himself. The children are given the letters "a", "m", "n", and "I". The capital "I" gives him his first acquaintance with the capital sign, and so it is explained to him that we use that sign when we start to write a new thought. As soon as he knows how to make some words out of these letters, he may learn how to write "I am a man." When the children can all write these letters properly, they are told that when letters are put together to make words they are given other names. For instance, the letter "m" is called "mmm." It sounds just like a cow starting to say "moo." The letter "a" may sometimes be called "ā", but is usually called "ă". Did you ever have the doctor tell you to open your mouth and say "aaaa", while he looked to see whether or not you had a sore throat?

Similar practice on the sounds of "n" and "I" will bring the children to the point where they will begin to profit by phonetic games and competitions. One game which correlates physical exercise with phonetic drill is the following. The children form a small circle. One child is given a bean bag, or a ball with a bell inside it, and starts the game by giving the sound of a letter, such as "mmm", calling the name of one of the other children and throwing the bag in his direction. If the child called on can give a word beginning with that letter, then he is allowed to sound a letter and to call on another child for a word, throwing the bag as he names the child. If he cannot immediately give a word beginning with "mmm", then he must throw the bean bag back to the starter, who sounds the letter again and calls on someone else for a word. Five minutes of this game is long enough for drill, yet short enough to forestall the waning of interest.

For children with alert minds, this is interesting. Each child is given a list of letters on a slip of paper, each slip being arranged differently from the others. Then the teacher stands in front of the class with her watch in her hand. When she says "Go", the first child starts the race by giving as rapidly as he can the names of all the letters on his slip, as well as their sounds. As soon as he finishes the next child starts on his slip, and so on around the class. The teacher keeps track of the time for each child. Whenever a child makes a mistake the others have the right to correct him at once. This is a lively game which may be too exciting to be appreciated by the class next door! Its good points are obvious, however.

The first words which the children are taught to form need not make the sentence "I am a man." Letters should be chosen which will prepare the pupils for the first page of whatever primer they are to read first. Each letter as it will appear in the primer is studied in this way—first, the letter slips, then the writing, then the drill on the phonetic sound, finally the use of the letter, orally, in reading and in writing, and in its relation in words to other letters which the child already knows. Care is taken to choose words which are used on the first page of the primer, so that when the pupil starts to read his first story, he will be able to read consecutively enough to grasp its meaning.

If the first primer story is a long one it often pays to precede the reading directly from the book by the presentation of the whole story on sentence and paragraph slips. This makes it possible for the child to enjoy the mental stimulus of being able to read a whole story from beginning to end from the time of his first introduction to books.

When the children have passed the preliminary stage of learning the letters with their phonetic values, and have read the first story in their primers, it is time to introduce a little practice in silent reading, if for no other reason than to break the habit of lip-movement before it becomes fixed. After each story has been studied, two or three questions concerning that story are written on slips of paper and given to the children. These questions are to be read silently, but answered orally or in writing.

A Lesson by the Word Method

(This lesson, or unit of work, may represent from three weeks to two months of instruction, according to the ability of the child. Most of the instruction is individual. After the first few days, however, two or three children may work together.)

When Tommy first comes to school he is allowed to do as he pleases, unless he pleases to do nothing at all. As soon as he has had an opportunity to get acquainted with the other children, and to display any possible signs of initiative, he is encouraged to enter into the games and the singing of the class. The first reading lesson is likely to center around some object in which he has shown special interest. Possibly this interest has been guided by the teacher somewhat.

Tommy may take particular delight in a big ball that has rolled into his hands. The teacher asks him if he would like to see how the word "ball" looks when it is written on paper. Tommy is more or less interested to find out, depending on his mentality and his intellectual curiosity. Most children are intensely anxious to read from paper as they have observed the other children doing. The teacher hands Tommy a ball on which she has pasted a slip of paper containing the word "ball." Tommy feels of the word carefully. Then the teacher gives him another slip, like the one on the ball, which she lays flat on his desk. Tommy reads the words over and over, using both index fingers. The teacher and Tommy then decide whether or not the ball is a *big* ball. If they decide it is, Tommy then reads a slip on which are the words "big ball." The next step for the child is that of picking out slips containing the word "ball" from among other slips on which are written unfamiliar words. Then he has on his desk two word-slips, one of which contains the words "big ball", the other the words "little ball." He finds the slip which says "big ball." Then he is told what the other slip says. Next he is given two balls, one large and one small, and told to hand to the teacher the little ball and the slip of paper which says "little ball" on it.

At this point writing is first introduced. It is not correlated noticeably with reading at first, but the word "ball" is used as the first word for practice. This is a particularly good word on which to give the child his first writing lesson, because of the fact that although each letter has a different number of dots, the dot learned for "a" helps in the making of "b", and they both help in the making of "l." Tommy next learns to recognize his name when he finds it on a word-slip. All children are interested in being able to read their own names. There is also a practical reason for having a child learn to read and write his own name, for it simplifies the problem of keeping his work separate from that of the rest of the class.

Tommy's next reading period may be spent on sentence slips. Unless he has lost interest in the ball, the slips may read "Find a ball" and "This is a ball." The teacher hands him the slip which reads "Find a ball" and says to him that that slip tells him what she wants him to do. "It says, 'Find a ball.' Read it and tell me what it says." She runs his two index fingers over the sentence. When he has come to the end of it, she asks, "What does it say?" When the child answers correctly, she has him go and find the ball.

Then she gives him the other slip, saying, as she runs his fingers over it, "This sentence says, 'This is a ball!' What does the sentence say?" After Tommy answers, she tells him to hand her the ball and say to her, "This is a ball." Then she has him locate the words "a ball", and the word "this." The boy's next writing lesson will be a review of the word "ball" and practice on the letters which form the word "this." Then he writes the words "this ball."

Now he is given the word "table", and is led to the table with the explanation that they are going hunting for the meaning of that word. When they reach the table Tommy sits down, and, putting his word-slip flat on the table, reads the word "table." Then he finds under his hand the sentence "This is a table." He seeks for the difference between the sentences "This is a table", and "This is a ball." Another pupil who is more advanced may drill him on the word and sentence slips which he has already had. In the making of sentence and word-slips it is necessary to keep in mind not only the pupil's interests, but the words which are most essential to the vocabulary of a first grade child. Copying flash cards of known worth is hard for the teacher but affords excellent material for the pupil. Soon he is ready for paragraphs and then for short stories of one or two pages.

One must take care that the child reads everything to himself before he tells it orally. If he reads a story orally he must read it by phrases or sentences to himself, before he says them aloud. Action words like "hop", "run", or "smile" should be taught the child very early in his reading career, because it gives him a chance to relieve his nervous tension by controlled activity. If a museum of familiar objects is available or if there is a nearby natural history museum, a study of animals, together with the animal sounds, furnishes good material for the first lessons. Few things afford more interest to young children than the imitation of animals. For children with speech defects, the animal-sound approach, and animal stories, are valuable aids to speech training. In this way many of the child's speech defects can be corrected without his being made self-conscious.

After the first few weeks, when the pupil has established the habit of reading for thoughts—that is, reading by words and phrases which convey whole ideas—it is safe to correlate spelling and writing more closely with reading. Nature study, personal hygiene, school duties all furnish considerable matter that may be used from the first to stimulate purposive reading.

A Lesson by the Letter-Word Method

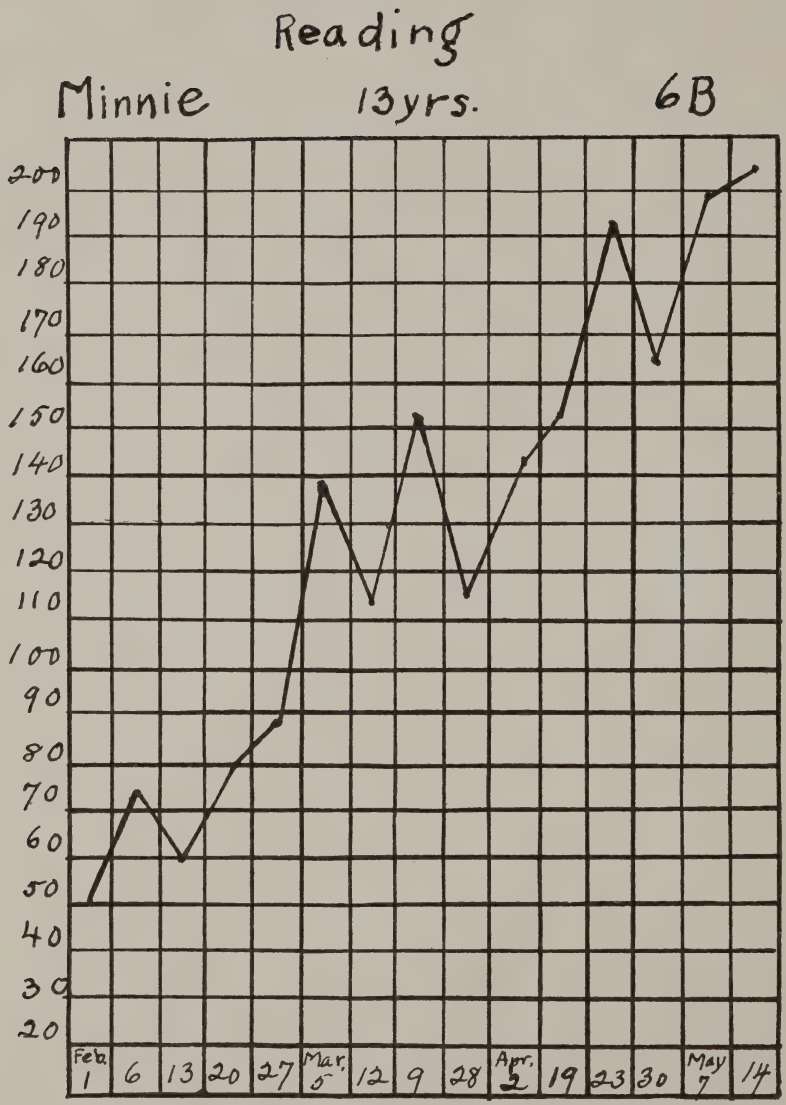
(This lesson represents a unit of work extending over the first ten days or the first month, according to the ability of the pupil. Part of the work is individual, but some of it is done with as many as five or six children.)

The class which is ready to learn braille has six children in it. They are told a story which turns out to be one that they can learn to read for themselves if they wish. In order to read it, they need to know their letters, and so they may start doing that right away. One child is allowed to pass out a little slip of paper to each pupil, containing one letter of the title to the story. The first day all the children have the same letter. The teacher says, "This letter is spelled 'l', (if the story is The Little Red Hen). It is pronounced 'l' ", giving it its phonetic sound. After the children have read it, spelled it, and pronounced it, another pupil passes some more slips. These contain the first letter of the next word in the title, which is "r". The same process is repeated with this as was followed with "l". The next letter to be studied is the first letter in the last word of the title, which is "h." These three letters are mixed in with letters which they do not know, so that they may have the practice of distinguishing them.

The next step is to have one of the children tell the story of The Little Red Hen, with the assistance of the others in the class. Then they drill each other on the letter-slips, showing each other the letters they know, pronouncing them, and so forth. After the teacher knows that they are reasonably sure of these three letters, she gives them the letters "e", "d", "n". They are now ready to read the blends "en" and "ed". The words "Red Hen" follow after. The letter "L" is reviewed, with and without the capital sign. Then the whole word "Little" is given to the child. After he has read the title "Little Red Hen" a number of times, he is taught to write it. The letters "i" and "t" he studies first by writing them. This change in method forms a little diversion, and keeps the child from expecting to have all new material presented in the same way. Much of the drill on this first work may be eliminated from the class period by having the children drill each other or themselves on work already covered. Small blocks containing braille letters, long slips giving familiar letters mixed with unfamiliar ones, other slips on which familiar words are mixed with unfamiliar words, and phonetic games are all serviceable in training the children to read independently. When the children know all the letters that are necessary for the story of the Little Red Hen, they are ready for the book. Before they know the letters, the children will also have learned many of the most important words in the story. A few others they can work out for themselves, with encouragement from the teacher.

Before he looks at his book, each pupil is given a slip of braille containing one of the first six sentences in the story. Working with the pupils individually, the teacher makes sure that each pupil knows his own sentence. Then she has him find a sentence in his book which looks just like the sentence on his slip of paper. The child who has the first sentence on the page then reads it aloud. The child whose sentence follows his reads next. When the six sentences have been read, the pupils exchange sentences, maybe shuffling them first. The teacher sees to it that no child is given the same sentence twice. She also insists that the sentences must be read through silently before they are read to the class.

Phonetic flash cards are put into braille for the pupils to study as seat work. Also a series of flash cards, which are based



Progress in Speed of Reading, Feb. 1 to May 14, 1925, as the Result of Systematic Drill. Heading, Words per Minute, and the Dates are in Braille as well as in Ink. See page 28.

on the three hundred most common words among children are brailled for seat work. With the help of these braille slips, and that gained from practice in writing letters, phonograms, and words, and from oral phonetic work, the children will be able to work out new words as they meet them in the primer. They can read with enjoyment their first stories, and make up short stories of their own for the other members of the class to read.

There is a danger in following a sample lesson too closely. Children are such little individualists that they sometimes refuse to fit in with any plan, no matter how universally applicable it is supposed to be. Nevertheless, it is hoped that the foregoing lessons may serve as a guide to those teachers who are facing a class of blind children for the first time. They may prove interesting to experienced teachers also, since they represent different methods by which blind children are taught to read. There are many other combinations of procedures which might fit particular situations more accurately than do these. The lessons which are here presented are typical of what is being done in the majority of schools and classes for the blind.

V.

Teachers of children who see are wonderfully blessed with a wealth of supplementary reading material which is so universal in its character that no child need lose interest in reading for lack of the particular sort of literature that appeals to him. Teachers in schools for the seeing may not be so sure that they are thus blessed, but any teacher of blind children might easily correct their sense of proportion. All sorts of devices for stimulating interest in reading can be had for a reasonable price from educational publishers. Flash cards, dramatic reading games, reading charts, word-games, letter-games, riddle-games, silent-reading drills, and innumerable pictures constitute an abundance of material on which the teacher of the blind looks with longing. It is an arduous task to devise similar material for use with the blind, and, when it is devised, it is an equally wearing problem to keep an adequate supply always ready for the pupils' use. Hours may be spent merely in determining the adaptability of supplementary material that is used in schools for the seeing. Yet for most people, it takes less time to adapt material than it does to invent new material. Before it can be ascertained whether or not a new game or story fulfills the function it is supposed to fulfill, it must be checked, word for word and thought by thought, with the vocabulary attainments of children in the particular grade it is expected to serve. It must also suit their interests, and their limitations of imagination and thought. Yet it must represent a forward step in their reading experience. In adapting material which is known to be interesting and adequate for the vast majority of seeing children, much of this work is eliminated.

In the following pages are presented the most widely used and the most generally useful supplementary materials and auxiliary devices that have been contributed by educators of the blind.

One great incentive to progress in reading on the part of the pupils is the opportunity to watch their own improvement. Such an incentive is furnished by graphs similar to the one on page 26, which has been used in a class for the blind in the Minneapolis Public School system. The following explanation and description of this graph is quoted from a paper written by Miss Beulah Hulberg, the teacher, and distributed by the Bureau of Research of the American Foundation for the Blind.

"The chief stimulus in creating competition was the use of graphs which the children could feel. The lines were made with a sewing-machine tracer, and the numbers were made with a braille writer. Number 36 Dreadnaught Ledger paper was used, and each graph was 8½ x 11 inches in size, this being the size of the paper which would fit into the children's notebooks. Each week two graphs were placed on the board, one belonging to the pupil obtaining the highest speed for that particular week, and the other to the child securing the greatest percentage of improvement. The braille figures and words, giving name, grade, age, and speed of the pupil, were interpreted in ink, so that anyone with sight would know at a glance which children were leaders that week. These graphs were also taken home when the pupils desired to do so, as was usually the case, and this gave the parents a chance to keep track of progress. There was also a class graph, on which every child's score was kept. Number 1 Diamond Round-Head paper fasteners were used instead of dots, these fasteners being connected by means of string. Each child was given a number instead of having all the names on this graph. The graph for the class was also made of Number 36 Dreadnaught Ledger paper, 24 x 36 inches, fastened at the top to a large sheet of heavy cardboard."

Other graphs have been used which vary somewhat from the one described here, but which have proved equally serviceable.

No supplementary material can be of greater value in extending the limited experience of the young blind child than a museum of those objects with which the seeing child is made familiar in innumerable ways through vision. The moving picture, the circus parade, the illustrated magazines, and other incidental stimuli—all are educationally important. A museum consisting of those things which should be familiar objects but which all too often are not, is a most practical means of stimulating interest in animals, in construction, in the social sciences. How can a little girl who has never seen a pig, and who cannot see the picture of one, be expected to show much interest in The Old Woman and Her Pig? Will there not be greater enthusiasm over the doings of the Dutch Twins if the children can study for themselves a pair of Dutch dolls, wooden shoes and all? The frontispiece is a picture that was taken at the American Museum of Natural History a number of years ago, but it illustrates clearly the type of object which is especially valuable for correlating reading with other subjects.

Educational and Interesting Objects Are Easily Brought Into the Schoolroom

Many industrial concerns have educational exhibits which they will send to schools upon request from the principal. These exhibits, which are sent free or sold at a low price, usually show a product in the various stages of its manufacture. Most of the exhibits consist of pictures, but there are a number which contain material admirably adapted for use with blind children. The November 1925 number of Ungraded gives a very helpful list of firms which offer exhibits for school use, together with the addresses. Although it is possible that some of these firms may have discontinued their exhibits, most of them will still have something to offer.

The majority of educators of the blind make use of numerous devices for introducing first grade pupils to braille which do not call for such fine co-ordinations of hand, attention, and thought, as does the regulation braille cell. Tack-boards, marbles punched into clay, and blocks are found in some schools and classes. The peg-boards shown on page —, however, are the ones which are most commonly used.

In one school, pupils who have special difficulty in co-ordinating their fingers are given an enlarged cell which is 1¼ x 2¼ inches in size. The dots, which are removable, are about one-half of an inch in diameter.

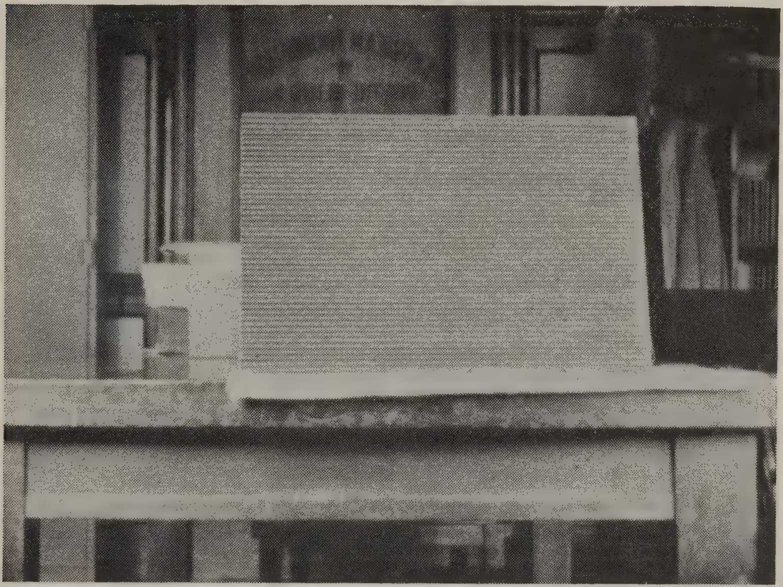
Even those instructors who make no use of peg-boards will find it convenient to have on hand for "busy-work", some small wooden blocks on which have been made braille letters with small escutcheon pins. These blocks are as practical for spelling drill as they are for word building.

On page 9 is shown a boy who is building sentences for himself out of words which he finds in one of the two compartments of the little black box in front of him. There are a number of words in that compartment which do not fit into his sentence. These he puts into the other compartment, so that he will not have to go over them again and again. This box and the board can be used for word building as well as for sentence building.

The illustration on page 31 shows the Boston School Board, manufactured by the Ropes Educational Service, 177 State Street, Boston, Massachusetts. It is designed primarily for use with partially-seeing children, but has proved a constant stimulus to reading in one class of small beginners. The board has grooves into which letter, word and sentence strips can be slipped. Whole tests of the sentence completion variety have been given by means of this board. Incompleted sentences are on the board when it is given to the pupil. In a box are a collection of words or phrases on slips which the child can slide onto the board in the proper places to complete the thought of the sentences.

The large educational racks which are to be found in so many schools for the seeing have furnished the inspiration for small individual racks made by teachers of the blind. They may be used for the same purposes as the Boston School Board or the ridged board shown in the picture on page 35. These racks are made from heavy weight paper, the strips forming the pockets being stitched or glued to the back. Word or sentence slips are held firmly yet are easily moved when lifted by the top edge.

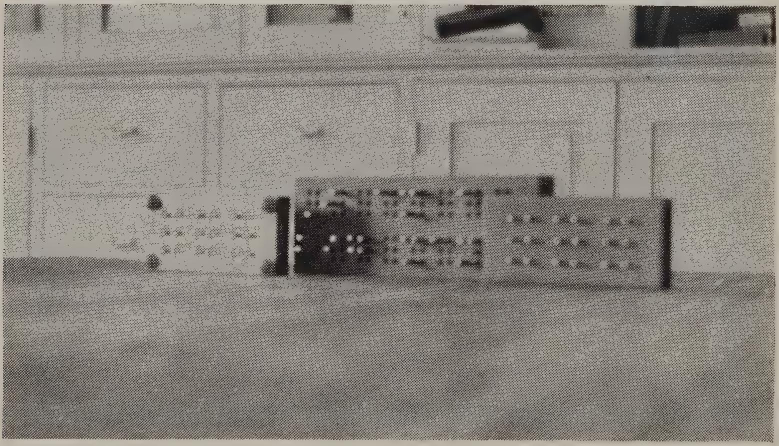
A former teacher in a residential school for the blind taught her beginners to play a game which they called "Hanging Out the Wash." To a wooden base 25 x 4 inches were fastened wooden uprights. From the top of one of these uprights to the top of the other a wire was stretched. This was the clothesline. The wash consisted of word-slips which were folded double, with the braille written on one face of the slip. The pupil might hang up all the words he found which meant clothing, or he might hang animals, instead. Sometimes the words would make a sentence if hung up in the right order.



The Boston School Board. Small size, 12 in. x 18 in. Large size, 18 in. x 24 in.

Probably every teacher makes use of the incentive furnished by rewards for work well done. Although too great reliance on rewards is likely to defeat its own end, a judicious use of them affords a spur to endeavor which should be utilized. Some teachers let the children make little booklets to take home. The animal cut-outs which are so easy to obtain now, form splendid illustrations for such books, but some cut-outs are much better than others when judged from the point of view of the blind child's fingers. For blind children even more than for those who can see, the opportunity to take little trips which have some definite object in view is of very great value indeed. The trip may be to some museum of natural history, or it may be to the field on the next street to visit the goat that is tied there. Whatever it is, if it has as a goal something which stirs the curiosity of the children, it is not only educational in itself, but may be used to arouse enthusiasm.

The foregoing suggestions probably represent only a small number of those that are being used in schools for the blind. The teacher who is new to the work for the blind may find assistance from the devices and materials which have been noted here, some of which are now employed by instructors experienced in the teaching of blind children.



Three Widely-Used Peg-Boards. The Six-Celled Board. The Three-Celled Board. The Three-Celled Reversible Board.

VI.

The following list of books and magazines in braille has been reported by primary reading teachers as especially useful:

BOOKS

American Printing House for the Blind, Louisville, Kentucky.

- Baby Kangaroo and Lily Lamb, C. E. Kilbourne. (Full spelling.) Penn. Publishing Company.
- Baby Monkey and the Wily Wolf, C. E. Kilbourne. (Full spelling.) and other stories with similar titles.
- Beacon Primer, J. H. Fassett. 2 vols. (Full spelling.) 1913. Ginn and Company.
- Beacon First Reader, J. H. Fassett. 3 vols. (Full spelling.)
- Beacon Second Reader. 2 vols.
- Beacon Third Reader. 2 vols.
- Beacon Fourth Reader. 2 vols.
- Braille Contraction Drill, H. R. Latimer.
- Braille Letter Drill, H. R. Latimer.
- Clean Peter and the Children of Grubbylea, Ottilia Adelborg. Longmans, Green & Company.
- Fifty Famous Stories Retold, James Baldwin. 2 vols. American Book Company.
- Gordon First Reader, Emma K. Gordon and Marietta K. Stockard. 1 vol. D. C. Heath and Company.
- Indian Why Stories, Frank B. Lindeman. 1 vol. Chas. Scribner's Sons.
- Magic Feather and Other Indian Tales by various authors. 1 vol. (Full spelling.)
- Mother Stories, Maud Lindsay. 2 vols. (Full spelling.) Milton Bradley Company.
- Newark Phonic Drill.

Howe Publishing Society, Cleveland, Ohio.

- Aldine First Reader, F. E. Spaulding and C. T. Bryce. Newson and Company.
- Aldine Second Reader, F. E. Spaulding and C. T. Bryce. Newson and Company.
- Fables from Afar, Catherine T. Bryce. Newson and Company.
- Just So Stories, Rudyard Kipling. Doubleday Page & Co.
- Winston Companion Reader, Book I. Firman and Maltby. John C. Winston Company.

Howe Memorial Press, Watertown, Massachusetts.
- Beginners' Primer. 2 vols. Houghton Mifflin Company.
- Beginners' First Reader. 1 vol. Houghton Mifflin Company.
- Crawfish and the Miller, printed in the three forms—full spelling, whole-word signs and full contractions, using wide line spacing for the use of beginners. 1 vol.

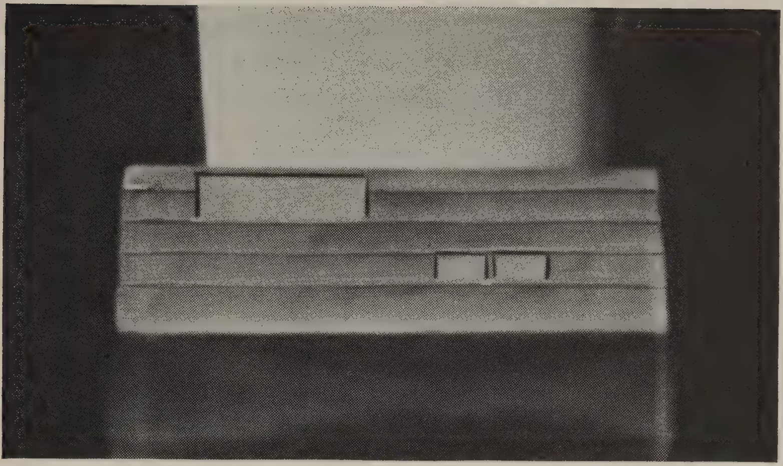
PERIODICALS FOR USE WITH JUVENILES

Clovernook Press, Mt. Healthy, Ohio.
- International Lions' Juvenile Braille Monthly. (Full spelling.)

Howe Publishing Society, Cleveland, Ohio.
- Juvenile Braille Magazine. (Contracted.)

The following books, which are not issued by braille publishing houses, contain material which teachers of the blind have considered worth transcribing. Owing to the importance of absolute accuracy in any material to be read by primary children, it has been pointed out that a teacher should not undertake to transcribe more than can be correctly written in the limited time at her disposal. So far as we know none of these books or selections in braille is for sale.

Beacon Supplementary Reader, Animal Story Book. Ginn and Company.
Big People and Little People of Other Lands. E. R. Shaw.
Horn-Shields Flash Cards. Ginn and Company.
In the Child's World. Emilie Poulsson.
Learn to Study Readers, Books I and II. Horn and Shields. Ginn and Company.
Mother Goose Rhymes.
Progressive Road to Reading, Story Steps, Book One, Book Two. Silver, Burdett & Company.
Riddle Book. Lily-Lee-Dootson. Rand, McNally & Company.
Stories for Little Readers. Emilie Poulsson.
The Language Garden. Howard, Hawthorne, Howard. Macmillan Company.



Educational Rack. 10 in. long, 3¼ in. wide. Three Pockets.

VII.

Our knowledge of the possibilities of reading as an educational and recreational force in the lives of blind people is still very fragmentary. The future may disclose new inventions which will supersede braille as a substitute for visible print. Until that day comes, however, methods of teaching braille to blind children will always be a matter of great concern. Educators will continue to hunt for the most profitable ways of creating a love for touch-reading in their young students. Before much more can be added to our small stock of definite information on the teaching of reading to blind pupils, a large number of experiments must be made and their results studied.

There are two problems which are fundamental. The first has to do with the content of a blind child's mind when he first enters school at six to eight or nine years of age. It is generally recognized that the initial progress of a child in school depends in large measure upon the richness of his pre-school experience. What six-year-old child with sight would be entirely ignorant of the meaning of words such as these—dog, sheep, cow, pigeon, flour, rope, bee, coal? Many of our entering pupils in a school for the blind do not recognize a lump of coal or the call of a pigeon. Many of them have never found out what a dog or a cat is like, because some unthinking parent either feared for the child's safety or never realized that the idea of dog is not innate in every human mind! The child who has been blind from birth or from a very early age is handicapped by lack of many concepts which can be acquired only from experience. Very few are so fortunate as to have parents who are intelligent enough to bring them into contact with the experiences common to other children of the same age. Yet all the stories in the primers and first readers are based on those experiences which are supposed to be the common heritage of children. Giving the primer to the average blind beginner is very much like giving a philosophical treatise to a high school freshman. A thorough study should be made of the content of children's minds when they enter schools and classes for the blind. When we have a better idea of the variety and quantity of their concepts, we shall know better how to overcome this fundamental disadvantage. Perhaps complete and final evidence is not obtainable on this point, but a long step could be taken in that direction, a step which would make the child's first years in school count for more than they usually do now. Consider the remarkable improvement that is often to be noticed in blind children after their first few weeks in school, as far as their self-control, self-helpfulness and spirit of fair play are concerned. The intellectual awakening is often little short of the miraculous. With a better understanding of the mental needs of the child, this awakening could probably be continued for a much longer time.

The second problem concerns the controversy over the relative merits of the letter and the word methods of teaching reading to the blind. Practically every educator who advocates the letter method or the letter-word method gives as his reason the fact that the finger can feel only one letter at a time. Two letters are undoubtedly as many as can be covered by a child's finger at one time. Yet how do we know that when the letter "l" is under the child's finger he mentally perceives "l" before he has moved his finger across the letter or shifted the finger vertically over it? If it is only through the repeated stimulation of the same pressure spots or successive stimulation of adjacent pressure spots that the mind interprets what the finger meets, then it is possible to advance to the correlative hypothesis that the finger can interpret a group of braille letters horizontally arranged better than it can interpret one letter. If this hypothesis is true, it will mean that the mind is more responsive to a succession of stimuli applied to the finger than it is to an isolated stimulus. This is definitely true in the case of the eye. One dot on a blank sheet of paper arouses some associations in the mind, although usually not vivid ones. A group of dots arranged horizontally bring more associations. The mind sees a country road, the base of an equilateral triangle, the edge of a carpet. When the dots are arranged in the form of a pyramid, the associations are even more numerous and immediate.

The fact that a child is born blind does not mean that he does not inherit the almost universal tendency of the human race to synthesize before it analyzes. The whole question is still in the realm of theory, but it should be brought out of that realm as soon as possible, however. At present the nearest approach which we have to a proof of this theory is in the teaching of line type. Line type has been discarded in most schools and classes for the blind, for the reason that line letters are very difficult for the finger to interpret. Yet some old readers of it declare they prefer the feeling of it to that of braille. Nevertheless, in the one class where line type is still taught before braille is introduced, the children *all* learn to read fluently in a remarkably short time. This assertion applies even to backward children, although it does not apply to children with a seriously defective sense of touch. This reading prowess is of course partly due to the ability and faith of the teacher. Yet other good teachers have not obtained the same results. This teacher uses the word method, however. The children are taught to recognize the shape of whole words and phrases in line type before they are drilled on individual letters. The writer is presenting no brief for the word method as against the letter method. She desires only to emphasize the fact that there is serious need for experimentation on this problem of how the mind best interprets what the finger senses. When a paper man is trying to decide on the relative merits of two samples of paper which look alike, he rubs his fingers over each to detect any possible differences in texture or flexibility. Should he, instead, simply hold a small piece of each sample between his thumb and forefinger? The case is quite parallel.

Many other problems need attention. Most of these will consume much time but are simpler of solution than the two just presented. It is quite possible that more time should be given to oral reading in schools for the blind than in schools for the seeing. At present no one can say with any degree of assurance when silent reading should begin to occupy a prominent place in the time alloted to reading, or when oral reading should be dropped. There are few educators who do not believe in correlating reading with other subjects. Just how far such correlation may be carried depends in part on the amount and variety of suitable reading material in braille. Yet if the presses printed supplementary reading books in a hit-or-miss manner, nobody would be satisfied. There is need for a survey and selection of a group of books which will meet the needs of the widest possible number of braille teachers.

Throughout the years a quantity of apparatus for use in teaching reading has been invented. Much of this has never been widely applied. Peg-boards are used in a number of schools, yet among teachers of the blind there is the greatest difference of opinion concerning their value. More apparatus should be invented or adapted for use with blind children in order that greater variety may be introduced into the teaching of reading. Only in some remote future is it likely that the blind child will have too much diversity in his primary education. Reading games should be supplied for blind children which will have the same constructive value as do so many of those played by seeing children. That some investigation needs to be made concerning the approximate amount of time which should be devoted to reading was apparent in the discussion of the time element. When some schools give more than twice as much time as others to the subject of reading, there is room for an impartial study of the actual needs of blind children along this line.

The only good standardized silent reading tests for the first grade are largely dependent on vision. Such a test for use with first grade blind children could never be infallibly accurate, but would furnish the teacher a most serviceable means for diagnosis.

The American Foundation for the Blind is adapting two groups of reading tests that will meet the need for tests having more than one form. When the Gray Oral Reading Check Tests have been adjusted with regard to the time element, an excellent criterion of oral reading will be available for use with blind children. This test has five equivalent forms, so that a teacher may test a class at five different periods in the school year. When the Stanford Achievement Test Reading Examinations are adapted, one of the best silent reading tests may be used with a class of blind children. This test has three parts, which test Word Meaning, Sentence Meaning, and Paragraph Meaning respectively. There are two forms of the test, so that it is possible to get comparative results at both ends of the school term.

The proper size of book for use with beginners is another problem which invites experimentation.

The advisability of teaching children to read ahead on the next line with the left hand before they have finished the preceding line with the right hand will be more definitely established after a little further experimental evidence is obtained. Two experiments which are being conducted for the benefit of braille publishers will undoubtedly have something of value for teachers of reading. The first is being conducted to determine whether or not a narrower line spacing in braille books is feasible. The other is to ascertain what is the most legible height of braille dot.

The ability to read, to find enjoyment in and to profit from books has played such an important role in the advancement of civilization that educators are more than justified in their concern over the problem of teaching young people to know *how* to read.

In many respects methods of teaching reading to blind children have progressed notably within the last fifty years, but the amount of scientific study of the reading question has been very limited when compared with what has been done in the field of reading for the seeing. There is an infinite variety of factors which control interest in reading. Interest in reading in its turn very largely controls the amount of value received from reading. For the educator of the blind and for the educator of the seeing, all other reading problems arise from the effort to stimulate interest in reading on the part of the children, and of directing this interest to the best ends when it is once aroused. Although methods of handling the reading problem continue to improve, we can never hope to reach a point where further improvement is impossible. Just as the philosopher believed that man creeps ever nearer to perfection, as he travels through eternity, yet never reaches perfection, so it may be that educators are doomed eternally to study the problem of teaching reading yet never to reach its final solution.

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